

1. Claims 1-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Firstly, it is unclear that component (A), the urethane prepolymer is accurately described as a prepolymer in view of the claiming of a chain extender as a reactant used to form the prepolymer and in view of the recitation within claim 2 that the residual isocyanate groups are reacted with the chain extender.

Secondly, while the term, "water-based", is considered to be definite due to the claiming of the (C) water, the language, "amine-based chain extender", renders the claims indefinite, because it is unclear how the chain extender is based on or derived from amine.

Thirdly, with respect to claim 2, applicants have claimed that component (A1) is reacted with components (A2), (A3), and (A4) to yield a prepolymer; however, this language is unclear because it is unclear how active hydrogen containing compounds react with each other. It would seem that components (A1), (A2), and (A3) actually react with component (A4).

Fourthly, with respect to claim 7, it is unclear what is meant by "organic group" as it appears within the amine compound. It is unclear what specific compounds are encompassed by the language.

Lastly, with respect to claims 12 and 13, the claimed molar ratios are confusing, because it is unclear if actual ratios of 0.2:1 and 1.0:5.5 are being set forth or if ratio ranges of 0.2:1 to 1:1 and 1.0:1 to 5.5:1 are contemplated.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-7 and 10-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 93/23490 in view of Frisch, Jr. et al. ('295).

WO 93/23490 discloses the production of storage stable contact adhesives based upon aqueous polyurethane dispersions, wherein the polyurethane is derived from the reaction of a polyisocyanate, satisfying applicants' component (A4); a polyol, satisfying applicants' component (A1); a tertiary amine containing isocyanate reactive component, satisfying applicants' component (A3); and an alkoxy silane containing isocyanate reactive component, satisfying applicants' component (A5). See abstract. Furthermore, at page 8, lines 9+, the reference discloses the use of amine chain extenders, satisfying applicants' component (A6) and the use of potential anionic group containing isocyanate reactive compounds, such as dimethylolpropionic acid, satisfying applicants' component (A2).

4. While the reference fails to recite the use of basic compounds, corresponding to applicants' component (B), the position is taken that their incorporation would have been

obvious to the skilled artisan in view of the disclosure pertaining to the potential anionic group containing reactant and the requirement to neutralize such groups to render them dispersible. It has long been known that in order to successfully employ potential ionic groups within polyurethanes to render them dispersible that the potential ionic group must be neutralized in order to render it ionic in nature. This position is supported by the teachings of Frisch, Jr. et al. at column 21, lines 31+. It is noted that Frisch, Jr. et al. disclose an analogous aqueous silylated polyurethane composition; therefore, its teachings are relevant to both the instant invention and the primary reference.

5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO 93/23490 in view of Frisch, Jr. et al. ('295) as applied to claims 1-7 and 10-15 above, and further in view of Yu et al. ('010).

As aforementioned within paragraphs 3 and 4, the combined teachings of WO 93/23490 and Frisch, Jr. et al. are considered to render applicants' aqueous silylated polyurethane dispersion of claims 1-7 and 10-15 *prima facie* obvious; however, the references fail to disclose the use of alkoxy silane containing reactants derived from the reaction product of a primary amine containing alkoxy silane and an unsaturated carboxylic acid ester. Still, the use of such reactants to produce aqueous silylated polyisocyanate-based dispersions was known at the time of invention. Yu et al. disclose applicants' claimed alkoxy silane reactant at column 3, lines 13+, and discloses that they may be used to produce the aforementioned dispersions, and that such dispersions are useful as adhesives. Accordingly, given the equivalent utilities of the alkoxy silane reactants of WO 93/23490 and Yu et al., the position is taken that it would have been obvious to incorporate them within the primary reference as the required alkoxy silane

compound. It has been held that it is *prima facie* obvious to use a known compound for its known function. *In re Linder*, 173 USPQ 356. *In re Dial et al.*, 140 USPQ 244.

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO 93/23490 in view of Frisch, Jr. et al. ('295) and further in view of Yu et al. as applied to claims 1-8 and 10-15 above, and further in view of Stuart ('517).

As aforementioned within paragraphs 3-5, the combined teachings of WO 93/23490, Frisch, Jr. et al., and Yu et al. are considered to render applicants' aqueous silylated polyurethane dispersion of claims 1-8 and 10-15 *prima facie* obvious; however, the references fail to disclose the use of alkoxy silane containing reactants derived from the reaction product of a primary amine containing and secondary amine containing alkoxy silane and an unsaturated carboxylic acid ester. Still, the use of such reactants to produce silylated polyurethane compositions was known at the time of invention. Stuart discloses applicants' claimed alkoxy silane reactant at column 6, line 45 through column 7, line 25 (especially column 7, lines 16-19) and further discloses that they are used to produce the aforementioned polyurethanes. Accordingly, given the similar structure and functionality between the alkoxy silanes of Stuart and Yu et al., the position is taken that it would have been obvious to utilize them in the same fashion as by Yu et al., and accordingly, it would have been obvious to incorporate them within the primary reference as the required alkoxy silane compound. It has been held that it is *prima facie* obvious to use a known compound for its known function. *In re Linder*, 173 USPQ 356. *In re Dial et al.*, 140 USPQ 244.

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